

In re Application of:
Grotendorst and Neff
Application No.: 10/658,856
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PATENT
Atty Docket No.: FIBRO1130-3

REMARKS

Claim 15 has been amended. New claim 37 has been added. Claims 16-18 and 24-36 have been canceled without prejudice. Subsequent to the entry of the present amendment, claims 15, 19-21 and 23 are pending and at issue. These amendments and additions add no new matter as the claim language is fully supported by the specification and original claims.

I. Amendment to the Claims

Claim 15 has been amended to recite “[a]n isolated antibody that specifically binds to a C-terminal fragment of connective tissue growth factor (CTGF) polypeptide, wherein the antibody inhibits DNA synthesis...”; and incorporating the subject matter of claims 16-18, which have been canceled. This is supported in Examples 1 and 3 of the specification.

Claim 22 has been amended deleting the phrase “and human antibody residues”, which has been incorporated into new claim 37.

The claims add no new matter.

II. Rejection under 35 U.S.C. §101 (non-statutory subject matter)

Claims 15-18 are rejected under 35 U.S.C. §101, as allegedly being directed to non-statutory subject matter. Applicants respectfully traverse the rejection as it applies to the pending claims.

According to the Office Action, the claims read on antibodies as they occur in nature, and therefore fail to show the hand of the inventor.

Claim 15 has been amended to recite an “isolated” antibody that specifically binds to “a C-terminal fragment of CTGF”, thereby overcoming the rejection. Further, claims 16-18 have been canceled, therefore the rejection with regard to these claims is moot.

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Accordingly, withdrawal of rejection of claims 15-18 under 35 U.S.C. §101 is respectfully requested.

III. Rejections under 35 U.S.C. §112, Second Paragraph

Claim 22 is rejected under 35 U.S.C. §112, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22 has been amended deleting the phrase, "and human antibody residues", which has been incorporated into new claim 37.

Accordingly, withdrawal of rejection of claim 22 under 35 U.S.C. §112, second paragraph is respectfully requested.

IV. Rejections under 35 U.S.C. §102

Claims 15-19 and 23 are rejected under 35 U.S.C. §102(a) as allegedly anticipated by Grotendorst et al., (U.S. Patent No. 5,408,040). Applicants respectfully traverse the rejection as it applies to the pending claims.

To anticipate, a single reference must inherently or expressly teach each and every element of claimed invention. *In re Spada*, 15 USPQ2d 1655 (Fed Cir. 1990); and *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). MPEP § 2131. Further, the claimed invention must be distinct from what is apparently inherent in the reference, and the reference must be enabling to place the allegedly disclosed matter in the possession of the public. *In re Fitzgerald et al.*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980); and *Akzo N.V. v. U.S. Int'l Trade Comm'n*, 1 USPQ2d 1241, 1245 (Fed. Cir. 1986).

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According to the Office Action, Grotendorst et al., describe monoclonal or polyclonal antibodies specifically binding to CTGF and not to PDGF (claims 2-4), as well as disclosing uses thereof. The Office Action states that Grotendorst et al. also disclose at column 7 that "antibodies were to synthetic peptides containing the carboxyl sequences of the protein" (Office Action, page 4), which allegedly corresponds to the carboxy terminus of SEQ ID NO:4.

Claim 15 has been amended and recites that the C-terminal fragment "inhibits DNA synthesis", as well as incorporating the subject matter of claims 17-18, which have been canceled.

It is submitted that Grotendorst et al., do not anticipate the claimed invention, because Grotendorst et al., do not disclose *each and every element* of the claimed invention. First, the text at column 7 of Grotendorst et al. describe antibodies directed against the C-terminus of PDGF, not CTGF. Further, the genus of antibodies that bind CTGF, as provided by Grotendorst et al., is diverse and includes a large number of species. Additionally, the antibodies disclosed by Grotendorst et al., although uniform in their ability to specifically bind CTGF, are not uniform in other important characteristics. The present invention demonstrates for the first time that a subset of antibodies, i.e., those that bind C-terminal CTGF, can be functionally distinguished from antibodies that bind to other regions of the polypeptide, e.g., the N-terminus. This feature is not disclosed by Grotendorst et al. As such, Grotendorst et al., do not specifically name or functionally describe the antibodies presently claimed by Applicant. Therefore, Grotendorst et al., do not disclose *each and every element* and cannot anticipate the claimed invention.

Accordingly, withdrawal of rejection of claims 15-19 and 23 under 35 U.S.C. §102 is respectfully requested.

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V. Rejections under 35 U.S.C. §103

Claims 20 and 22 are rejected under 35 U.S.C. §103(a) as allegedly obvious over Grotendorst et al., in view of Hoogenboom et al. (U.S. Patent No. 5,565,332). Applicants respectfully traverse the rejection as it applies to the pending claims.

To establish a *prima facie* case of obviousness, three basic criteria must be met: 1) a suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; 2) a reasonable expectation of success; and 3) the references must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP § 2143.

According to the Office Action, although Grotendorst et al. do not describe a human or humanized antibody, Hoogenboom et al. describe a human or humanized antibody and methods of making the same. Therefore, it would have been obvious to the person of ordinary skill in the art at the time the invention was made.

Claims 20 and 22 are directed to a human monoclonal antibody and an antibody comprising murine antigen binding residues, respectively.

First, claims 20 and 22 are directly dependent on claim 15. Claim 15 has been amended to include an activity of the antibody and to incorporate the subject matter of claims 16-18, which have been canceled. The discussion above relating to reasons why Grotendorst et al. alone do not anticipate the claimed invention applies herein. That is, Grotendorst et al. do not establish a *prima facie* case of obviousness because Grotendorst et al. do not describe the

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specific claimed CTGF antibody, which is directed to amino acid residues 4 through 74, 75 through 172, or 4 through 172 of SEQ ID NO:4.

It is further submitted that there is no case of *prima facie* obviousness with regards to the combination of Grotendorst et al. and Hoogenboom et al. Hoogenboom et al. may describe humanized antibodies and methods of making them (column 1, lines 16-30), however, since Grotendorst et al. do not describe any of the claimed antibodies, there is no suggestion or motivation to combine Hoogenboom et al. with Grotendorst et al. in the first place. Further, upon combining Grotendorst et al. with Hoogenboom et al., one of ordinary skill in the art would still *not* arrive at the claimed invention.

Accordingly, withdrawal of rejection of claims 20-22 under 35 U.S.C. §103 is respectfully requested.

V. Double patenting rejection

Claims 15-19 and 23 are rejected on the ground of nonstatutory obviousness-type double patenting as being allegedly unpatentable over claims 2-4 of U.S. Patent No. 5,408,040 to Grotendorst et al. Further, claims 20 and 22 are rejected on the ground of nonstatutory obviousness-type double patenting as being allegedly unpatentable over claims 2-4 of U.S. Patent No. 5,408,040 to Grotendorst et al. in view of Hoogenboom et al. (U.S. Patent No. 5,565,332). Applicants respectfully traverse the rejections as they apply to the pending claims.

As discussed above, claim 15 has been amended to incorporate the subject matter of claims 16-18, which have been canceled. The claimed invention is drawn to a C-terminal CTGF antibody directed to amino acid residues 4 through 74, 75 through 172, or 4 through 172 of SEQ ID NO:4. Since Grotendorst et al., alone or in combination with Hoogenboom et al., do not

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describe the claimed antibodies to the C-terminus of CTGF, the claimed invention is "patentably distinct" from Grotendorst et al. alone or in combination with Hoogenboom et al. Therefore, there is no basis of nonstatutory obviousness-type double patenting.

Accordingly, withdrawal of rejection of claims 15-19 and 23, and of claims 20 and 22, under nonstatutory obviousness-type double patenting is respectfully requested.

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Conclusion

In view of the amendments and above remarks, it is submitted that the claims are in condition for allowance, and a notice to that effect is respectfully requested. The Examiner is invited to contact Applicant's undersigned representative if there are any questions relating to this application.

A check in the amount of \$60.00 is enclosed as payment for the one-month Extension of Time fee. No other fee is deemed necessary with the filing of this paper. However if any fees are due, the Commissioner is hereby authorized to charge any fees, or make any credits, to Deposit Account No. 07-1896 referencing the above-identified attorney docket number. A copy of the Transmittal Sheet is enclosed.

Respectfully submitted,

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